**OSPF – Most used Interior Gateway Protocol**

The IETF (Internet Engineering Tast Force) formed a working group in 1998 to develop a new routing protocol in response to the limitations of most common routing protocol RIP (Routing Information Protocol) at that time. Then in 1991, the IETF published RFC 1247, which defined the first version of OSPF. In 1998, the IETF publishes RFC 2328 which defines the current version of OSPF (OSPFv2) and the last version of OSPF (OSPFv3) for IPv6 was published in 1999 (RFC 2740). And it is now one of the most widely used routing protocols in the world. OSPF is known for its scalability, reliability and support for advanced features such as authentication and traffic engineering. Some key features of OSPF is given below:

* OSPF stands for **Open Shortest Path First** - uses Dijkstra’s Algorithm (SPF).
* **IGP** (Interior Gateway Protocol) - route traffic within a single **AS** (Autonomous System).
* **Standard Protocol** – Cisco/Non-Cisco devices.
* Link-State Protocol – sent **LSA**s (Link-State Advertisement) periodically.
* Thus, convergence is Fast (**40 seconds**).
* Protocol number **89**.
* AD (Administrative Distance) value **110**.
* Multicast address **224.0.0.5** for normal communication and **224.0.0.6** for update to DR/BDR (Designated Router/Backup Designated Router).
* Supports equal **Load Balancing**.
* No automatic summarization.
* Multiple **Areas**.
* Different **OSPF Processes** in a single autonomous system.
* Supports **CIDR** (Classless Inter-Domain Routing).
* **No limit** for number of **Hops** (routers) connected.
* Supports **IPv6** IP addresses in **OSPFv3**.
* Supports various **Authentication** types including Cryptographic Authentication (MD5).
* OSPF is an IGP (Interior Gateway Protocol) but it can also **Redistribute External Routes** from different Autonomous System into its routing table.

OSPF is a powerful and versatile routing protocol that can be used in a wide variety of networks. It is good choice for networks of all sizes, from small networks with a few routers to large networks with thousands of routers.